



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/919,859	08/02/2001	Hans Jurgan Mattausch	212005US2	4187
22850	7590	01/29/2004	EXAMINER	
OBLON, SPIVAK, MCCLELLAND, MAIER & NEUSTADT, P.C. 1940 DUKE STREET ALEXANDRIA, VA 22314			VITAL, PIERRE M	
			ART UNIT	PAPER NUMBER
			2188	

DATE MAILED: 01/29/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/919,859

Applicant(s)

MATTAUSCH ET AL.

Examiner

Pierre M. Vital

Art Unit

2188

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 28 November 2003.
- 2a) ☒ This action is FINAL. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-52 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-52 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 28 November 2003 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. §§ 119 and 120

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 13) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.
- a) ☐ The translation of the foreign language provisional application has been received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Response to Amendment

1. This Office Action is in response to applicant's communication filed November 28, 2003 in response to PTO Office Action mailed July 28, 2003. The Applicant's remarks and amendments to the claims and/or the specification were considered with the results that follow.
2. Claims 1-52 have been presented for examination in this application. In response to the last Office Action, claims 1-31, 33, 35, 36, 38, 40, 41, 43-45 and 47-52 have been amended. No claims have been canceled or added. As a result, claims 1-52 are now pending in this application.
3. The rejection of claims 31-40, 49 and 50 has been withdrawn due to the amendment filed November 28, 2003.

Drawings

4. Figures 1 and 2 should be designated by a legend such as --Prior Art-- because only that which is old is illustrated. See MPEP § 608.02(g).

In re Hellsund, 177 USPQ 170, held that statement by applicant, whether in patent application or in other papers submitted during prosecution, that certain matter is prior art to him, is an admission that that matter is prior art for all purposes, whether or not a basis in 35 U.S.C. 102 can be found for its use as prior art.

The changes in Figs. 1 and 2 from "Prior Art" to "Background Art" are not accepted by the Examiner.

Art Unit: 2188

A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

Specification

5. The amendment filed November 28, 2003 is objected to under 35 U.S.C. 132 because it introduces new matter into the disclosure. 35 U.S.C. 132 states that no amendment shall introduce new matter into the disclosure of the invention. The added material which is not supported by the original disclosure is as follows:

- (a) On pages 1-3, and in Figs 1 and 2, the deletion of the conflict management circuit 60 which was previously admitted as prior art.
- (b) On page 11, lines 4-5, 7-8; on page 12, lines 14-19 and on page 25-27, the description and functions of a conflict management circuit 60; and the addition of Figs. 11-12 showing the addition of a conflict management circuit 60.

By filing patent application containing figures labeled prior art, and statements explanatory of such figures, applicants admitted that these figures may be considered prior art for any purpose, including use of evidence of obviousness under 35 U.S.C. 103. We see no reason why applicants' representations in their application should not be accepted at face value as admissions that Figs. 1 and 2 may be considered "prior art" for any purpose. By filing an application containing figs. 1 and 2, labeled prior art,

Art Unit: 2188

and statement explanatory thereof, applicants have conceded what is to be considered as prior art in determining obviousness of their improvement.

No amendment may introduce new matter into the disclosure of an application.

Applicant is required to cancel the new matter in the reply to this Office Action. See MPEP 608.04.

Claim Objections

6. Claims 1, 20 and 43 are objected to because of the following informalities:

- (a) In claim 1, line 7, it appears that "and of an N-port" should be changed to –and an N-port--.
- (b) Claim 1 recites the limitation "the N cache line offsets" in line 8. It appears that "the N cache line offsets" should be changed to –N cache line offsets--.
- (c) Claims 20 and 43 recite the limitation "the cache line offset" in line 6. It is not clear which cache line offset this language is referring to. It appears that "the cache line offset" should be changed to –a cache line offsets--.

Appropriate correction is required.

Claim Rejections - 35 USC § 112

7. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

8. Claims 1-52 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

On pages 1-3, and in Figs 1 and 2, the deletion of the conflict management circuit 60 which was previously admitted as prior art.

On page 11, lines 4-5, 7-8; on page 12, lines 14-19 and on page 25-27, the description and functions of a conflict management circuit 60; and the addition of Figs. 11-12 showing the addition of a conflict management circuit 60.

By filing patent application containing figures labeled prior art, and statements explanatory of such figures, applicants admitted that these figures may be considered prior art for any purpose, including use of evidence of obviousness under 35 U.S.C. 103. We see no reason why applicants' representations in their application should not be accepted at face value as admissions that Figs. 1 and 2 may be considered "prior art" for any purpose. By filing an application containing figs. 1 and 2, labeled prior art,

Art Unit: 2188

ipsissimis verbis, and statement explanatory thereof, applicants have conceded what is to be considered as prior art in determining obviousness of their improvement.

Applicant is required to cancel the new matter in the reply to this Office Action.

Claim Rejections - 35 USC § 102

9. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

10. Claims 1, 3-4, 6, 13, 14, 16, 23 and 25 are rejected under 35 U.S.C. 102(a) as being anticipated by applicants' Admitted Prior Art (hereinafter "APA").

As per claim 1, APA discloses a multi-port cache memory, comprising:

first to K-th N-port tag memories [*multi-port cache memory comprises 2 tag memories; page 4, lines 6-8*] each consisting of M-number of one-port cell blocks [*each of the tag storages is formed from multi-port storage cells; page 4, lines 13-15*] and of an N-port decoder for decoding the N cache line indices, each having 1 bit or more [*cache line indices are transmitted into the N-port decoder; page 2, lines 19-23*], supplied to the first to K-th tag memories [*cache line indices of N*mind bits are transmitted into the N-port decoder of the tag memory, page 2 lines 19-21*], each of K and M being an integer of 1 or more and N being an integer of more than 1 [*N ports, K=2 tag memories, M= multi-port*];

first to K-th N-port data memories [*multi-port cache memory comprises 2 data memories; page 4, lines 6-12*] each consisting of M-number of one-port cell blocks [*each of the data storages is formed from multi-port storage cells; page 4, lines 13-15*] and of an N-port decoder for decoding the N cache line indices, each having 1 bit or more [*cache line indices are transmitted into the N-port decoder; page 2, lines 19-23*], and the N cache line offsets, each having 0 bit or more, supplied to the first to K-th data memories [*the cache line offsets of N*word bits are transmitted into the N-port of the data memory; page 3, lines 9-11*]; and a conflict management circuit for managing the write and read conflicts in the first to K-th N-port tag memories and the first to K-th N-port data memories [*conflict management circuit rejects the access of all but one of the conflicting ports; page 3, lines 18-22*].

As per claim 3, APA discloses the multi-port cache memory comprises first to K-th comparing circuits [*cache hit comparing circuits 30, 30a; page 4, lines 8-9*] for comparing the tags supplied to the first to K-th N-port tag memories with the tags generated from the first to K-th N-port tag memories, respectively [*comparing the tags of the accessed data to the tags stored; page 2, lines 17-24*], and a cache hit signal is transmitted for each of the N ports by supplying the outputs of the first to K-th comparing circuits to a K-input OR circuit for each of the N ports [*OR gates transmit cache hit signals; page 4, lines 20-22*].

As per claim 4, APA discloses a multi-port cache memory according to claim 1, wherein the number M of said one-port cell blocks is less than the number N of ports of said N-port tag memory, and said N-port data memory [*each of the tag storages 20, 20a and data storages 50, 50a is formed from multi-port storage cells; page 4, lines 13-15*].

As per claim 6, APA discloses a multi-port cache memory according to claim 1, wherein said cell blocks included in said N-port tag memory and said N-port data memory consist of L-port cell blocks having the number L of ports not less than 1 and less than N ($1 \leq L < N$, L being an integer) [*each of the tag storages 20, 20a and data storages 50, 50a is formed from multi-port storage cells*; page 4, lines 13-15].

As per claim 13, APA discloses a multi-port cache memory according to claim 3, wherein the outputs of said first to K-th comparing circuits control first to K-th enable circuits that permit the input and output of the write data and read data in and out of said first to K-th data memories [*enable circuits permit transmitting the data words between the data bus and the data memories upon receipt of comparison in the comparing circuits*; page 4, lines 20-27].

As per claim 14, APA discloses a multi-port cache memory according to claim 3, wherein the number M of said one-port cell blocks is less than the number N of ports of said N-port tag memory and said N-port data memory [*each of the tag storages 20, 20a and data storages 50, 50a is formed from multi-port storage cells*; page 4, lines 13-15].

As per claim 16, APA discloses a multi-port cache memory according to claim 1, wherein said cell blocks included in said N-port tag memory and said N-port data memory consist of L-port cell blocks having the number L of ports not less than 1 and less than N ($1 \leq L < N$, L being an integer) [*each of the tag storages 20, 20a and data storages 50, 50a is formed from multi-port storage cells*; page 4, lines 13-15].

As per claim 23, APA discloses a multi-port cache memory according to claim 1, wherein the number M of said one-port cell blocks is less than the number N of ports of

Art Unit: 2188

said N-port tag memory, and said N-port data memory [*each of the tag storages 20, 20a and data storages 50, 50a is formed from multi-port storage cells*; page 4, lines 13-15].

As per claim 25, APA discloses a multi-port cache memory according to claim 1, wherein said cell blocks included in said N-port tag memory and said N-port data memory consist of L-port cell blocks having the number L of ports not less than 1 and less than N ($1 \leq L < N$, L being an integer) [*each of the tag storages 20, 20a and data storages 50, 50a is formed from multi-port storage cells*; page 4, lines 13-15].

Allowable Subject Matter

11. Claims 31-42 and 44-52 would be allowable if the specification and the drawings are rewritten or amended to overcome the rejection(s) under 35 U.S.C. 112, first paragraph, set forth in this Office action.

12. Claims 2, 5, 7-12, 15, 17-22, 24 and 26-30 would be allowable if rewritten to overcome the rejection(s) under 35 U.S.C. 112, first paragraph, set forth in this Office action and to include all of the limitations of the base claim and any intervening claims.

13. Claims 5, 7-12, 15, 17-19, 21-22, 24 and 26-30 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

14. Claim 20 would be allowable if rewritten or amended to overcome the objection(s) set forth in this Office action.

Response to Arguments

15. Applicant's arguments filed November 28, 2003 have been fully considered but they are not persuasive. As to the remarks, Applicants asserted that:

A declaration has been attached to the response filed November 28, 2003.

However, no copy of the declaration has been received.

Conclusion

16. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

17. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Pierre M. Vital whose telephone number is (703) 306-5839. The examiner can normally be reached on Mon-Fri, 8:30 am - 6:00 pm, alternate Friday off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mano Padmanabhan can be reached on (703) 306-2903. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 746-7239 for regular communications and (703) 746-7238 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 305-9000.

PMV
Pierre M. Vital
Art Unit 2188
January 16, 2004

Mano Padmanabhan
1/22/04
MANO PADMANABHAN
SUPERVISORY PATENT EXAMINER
TC2100